



*Today's cleaner burning diesel can improve air quality, meet strict new mileage requirements and reduce greenhouse gas reduction emissions.*

## Research Shows Cleaner Diesel Getting Cleaner All the Time

Recent research by the non-profit Coordinating Research Council (CRC) in conjunction with the Health Effects Institute (HEI), found that 2007 diesel engines using ultra low sulfur diesel fuel and equipped with state-of-the-art emission control technologies produce approximately 90 percent fewer emissions than 2004 model year engines.

CRC said the emission reductions from new diesel fuel and engines “exceeded substantially even those levels required by law.”

“These findings underscore just how clean this new generation of fuels, engines and emissions control technology really is,” said Allen Schaeffer, Executive Director of the Diesel Technology Forum, a Frederick MD-based organization representing the diesel industry.

*As we develop new fuels and technologies to meet climate change objectives and ever-cleaner air quality requirements, cleaner burning diesel is a highly dependable, efficient and cost effective fuel for the future.*

## A Fuel for the Future

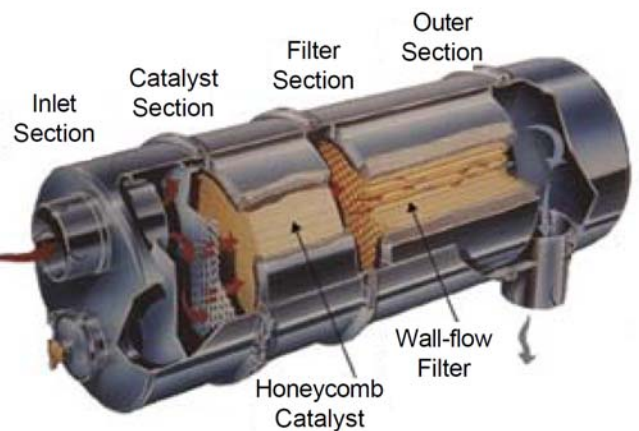
The combination of improved engine technology, particulate traps and extremely low sulfur diesel makes diesel a fuel for the future.

Since 2006 all diesel fuel sold in California has been cleaner burning, ultra-low sulfur diesel fuel. California refiners have led the way in producing a fuel, when combined with new engine and emission control technology, that is among the cleanest burning transportation fuels anywhere.

Cleaner burning diesel fuel is highly refined and contains very little sulfur – less than 15 parts per million. This cleaner fuel enables new diesel engines and emission control equipment to operate at peak efficiency to reduce emissions.

Innovative new engine technology and improved emission control equipment like particulate filters also play an important role in making diesel cleaner than ever.

### EXAMPLE OF A PARTICULATE TRAP



Source: Diesel Technology Forum

# Greenhouse Gas Emission Reductions



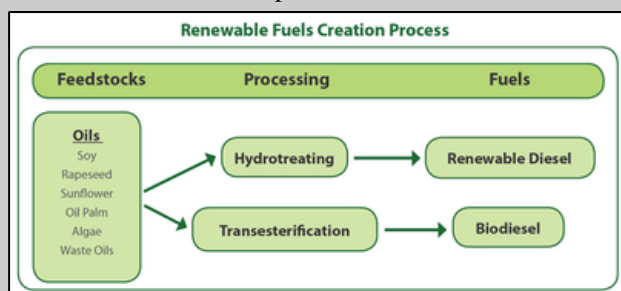
Because diesel engines are more efficient than gasoline engines, ultra low sulfur diesel can help California meet its goal of reducing greenhouse gas emissions. Research at the University of California estimates California ultra low sulfur diesel fuel produces less greenhouse gas emissions than California reformulated gasoline, when emissions are adjusted for the improved efficiencies of diesel engines.

## Biodiesel & Renewable Diesel

Promising research into new forms of biodiesel and renewable diesel reinforce the importance of diesel fuel in a diversified portfolio of transportation fuels.

Biodiesel and renewable diesel may one day help reduce America's dependence on foreign oil, improve air quality and provide even greater greenhouse gas reductions than cleaner burning petroleum-based diesel.

Biodiesel and renewable diesel refer to fuels derived from renewable plant material, oils and animal fats with characteristics similar to petroleum-based diesel.



Diesel Technology Forum

## Diesel Passenger Vehicles

In recent years, new diesel passenger cars have not been available for sale in California either because they did not meet California's strict air emission requirements or because vehicle manufacturers didn't make them available.

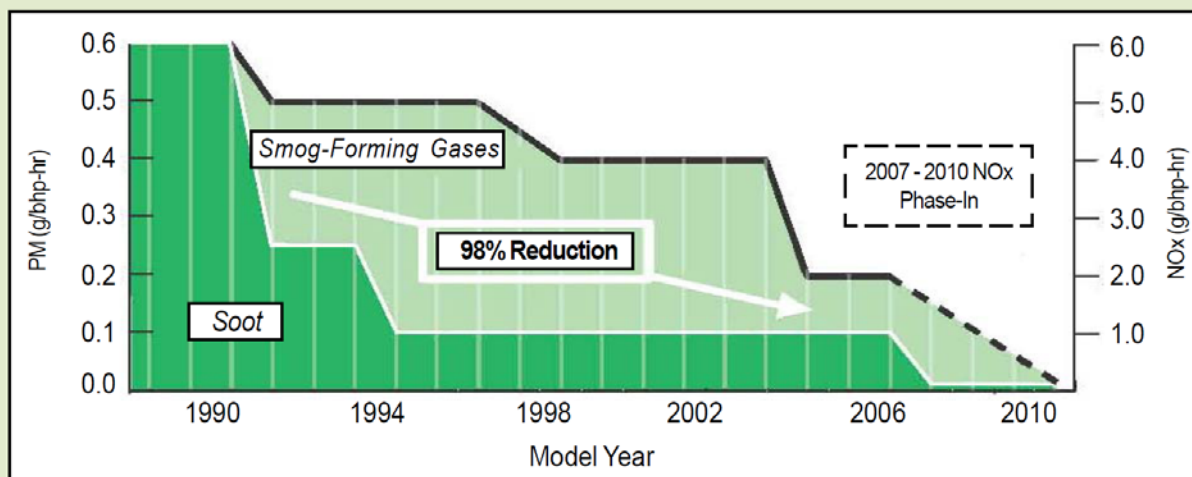


That began to change in 2008 and many vehicle manufacturers are selling or have announced plans to sell diesel powered passenger vehicles in California in 2010 and 2011. To learn

more about new diesel passenger cars, visit the Diesel Technology Forum at [www.dieselforum.org](http://www.dieselforum.org).

The introduction of ultra low sulfur diesel fuel helped pave the way for a new generation of vehicles that meet the toughest air quality standards, offer consumers high mileage and help California and other states reduce greenhouse gas emissions.

## CLEANER BURNING DIESEL = CLEANER AIR



Source: U.S. Environmental Protection Agency On-Highway Heavy Duty Diesel Emissions Reductions

In addition to higher efficiency and lower greenhouse gas emissions, heavy-duty cleaner burning diesel engines with new emission control technology and running on ultra low sulfur diesel fuel will reduce diesel emissions by more than 90%. By 2010, emission levels from new cleaner technology diesel engines will provide a 98% reduction compared to the 1988 model year diesel engines.